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Students - Teachers' perceptions of teachers' types of knowledge.

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Background

Students-teachers' professional learning and development has been much emphasized (Clarke & Hollingsworth, 2002; Garcia & Roblin, 2008). In particular, Shulman's (1986, 1987), pedagogical content knowledge (PCK) consists the main issue of the current teachers' education revolution. Following L. S. Shulman's work (1986, 1987), a theoretical distinction is often drawn between content knowledge, general pedagogical knowledge and pedagogical content knowledge.

The notion of content knowledge refers to teachers' understanding of the structures of their domain. According to Shulman, "The teacher need not only understand that something is so, the teacher must further understand why it is so" (Shulman, 1986, p. 9), which implies a deep understanding of his/her domain. On the other hand, general pedagogical knowledge refers to "those broad principles and strategies of classroom management and organization that appear to transcend subject matter" (Shulman, 1987, p. 8). The third type of teachers' knowledge, pedagogical content knowledge, is originally defined by Shulman (1986, pp. 9-10) as the knowledge on how best to represent and formulate the subject to make it comprehensible to others, as well as knowledge on students' subject-specific conceptions and misconceptions. It is "that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding (Shulman, 1987, p. 8).

Despite its great relevance to teachers' development and teachers' training curricula development, the precise nature of teachers' knowledge remains empirically uncertain. It may be hypothesized that the three types of knowledge represent conceptually distinct forms of knowledge or that they are merged to form a single body of teacher's knowledge (Krauss et al, 2008). Also, although much research has been conducted on PCK, students-teachers' perceptions on the issue of teachers' knowledge has seldom been addressed (Jang, Guan & Hsieh, 2009). This is important as students' perceptions can provide rich information for understanding students' cognition and classroom processes and can enable researchers and teachers to appreciate the perceived instructional and environmental influences on students' learning processes (Knight & Waxman, 1991).

Research Questions

The purpose of this research is twofold: first, to describe the development and validation of an instrument on students-teachers' perceptions regarding Shulman's types of teacher's knowledge and second, to use this instrument in order to identify and evaluate students-teachers beliefs regarding the value they attribute to Shulman's types of teacher's knowledge.

Methods

For the purposes of the study, a questionnaire, with Likert-scaled statements (scale 1 to 7), along with background information giving emphasis to participants' track in the school system, was developed and administered to 115 pre-primary and primary education students - teachers in the second year of their studies at the University of Cyprus. The questionnaire's statements were developed in order to best describe the three categories of teachers' knowledge. Examples of items in the three categories are:

In order for a teacher to teach effectively, it is important for him/her to:

1. Content Knowledge:

- Know how theories or principles of the subject he/she teaches have been developed
- Not only to understand the concept he/she teaches, but he/she can also explain it to students

2. Pedagogical Knowledge:

- Solve effectively the discipline problems that emerge during his/her teaching
- Use clear rules and routines in his/her classroom

3. Pedagogical Content Knowledge:

- Know students' subject - specific misconceptions
- Use appropriate examples in order to explain subject-specific concepts to his/her students.

This research used the quantitative research method. Statistical analyses on the data were carried out using the SPSS15 for Windows. Reliabilities and validities in connection with the questionnaire were tested. For reliabilities, Cronbach's alpha was adopted to evaluate the internal consistency. On the other hand, factor analysis was adopted to evaluate the constructed validities.

Frame

This questionnaire study consists part of a longer, longitudinal study. The study is based on the theoretical framework and research of effective teaching, teachers' knowledge and perceptions, aiming to empirically clarify the nature of teachers' knowledge and examine its relationship with qualitative teaching and learning and students' achievement.

The part of the study presented here focuses on students-teachers' perceptions about teachers' knowledge, having as its main purpose the development of an instrument that could identify and evaluate students-teachers' perceptions of teachers' knowledge. Specifically, it responds to the numerous calls in the literature for further evidence for the applicability of Shulman's (1986, 1987) taxonomy of teacher knowledge (e.g. Krauss et al, 2008; Lanahan et al, 2004) from the perspective of students-teachers' perceptions. This perspective has seldom been addressed and only in relation to one of the types of teachers' knowledge, pedagogical content knowledge (Jang, Guan & Hsieh, 2009).

Research findings

Reliability and validity measures of the instrument were established based on Cronbach Alpha and factor analysis. Results of analysis indicated that the instrument shows satisfactory validity and reliability. Also, almost all statements have a standard deviation ≤ 1 , a value that indicates a satisfactory degree of coherence between the answers. By factor analysis, it was examined whether construction of this questionnaire was consistent to the three types of teachers' knowledge, which were defined. Factor analysis revealed a good factor structure and provided suggestions to delete weak items. The questionnaire was revised and finally formed so that it could be used to investigate students' perceptions. Results answer the question whether students-teachers attribute equal value to the three types of knowledge or they consider a specific type of knowledge more important than the others for effective teaching and under what circumstances. Of course, this study can only provide limited insights into the validity of the measures, while the generalizability of the results is limited due to the study's small sample. Further research is needed in order to establish the reliability and validity of the instrument and investigate student-teachers' beliefs on the issue of teachers' knowledge, which is considered important for teachers' development programmes and curricula.